

Trends in Tuberculosis Mortality In Continental United States

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THE NUMBER of deaths and the death rate from tuberculosis continue to decrease very rapidly in the United States. In 1950, there were 33,959 tuberculosis deaths, a decline of 13 percent from the number in 1949. The death rate per 100,000 population for 1950 was 22.5, a decline of 14 percent from the rate for 1949. Further declines were realized in 1951 and in 1952. Estimated figures for 1951 show declines from 1950 of about 13 and 15 percent,

respectively, in the number of tuberculosis deaths and in the death rate; similar declines are noted for 1952 in comparison with 1951.

The yearly changes in the number of deaths and in the death rate in the United States for 1933 through 1952 are shown in table 1. (In this table and throughout the report, numbers of deaths for 1940-52 exclude deaths among Armed Forces personnel overseas, and rates are based on population excluding the Armed Forces overseas.) The striking downward trend in the tuberculosis mortality rate was interrupted only once in this period, in 1936. In recent years the rate of decline has accelerated. Since 1945, the tuberculosis mortality rate has been reduced by 60 percent. It is interesting

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Table 1. Number of deaths and death rates from tuberculosis (all forms), in continental United States, 1933-52

Calendar year	Number of deaths	Percentage decline from preceding year	Death rate per 100,000 population	Percentage decline from preceding year	Calendar year	Number of deaths	Percentage decline from preceding year	Death rate per 100,000 population	Percentage decline from preceding year
1933	74,842		59.6		1943	57,005	1.2	42.6	1.2
1934	71,609	4.3	56.7	4.9	1944	54,731	4.0	41.3	3.1
1935	70,080	2.1	55.1	2.8	1945	52,916	3.3	40.0	3.1
1936	71,527	¹ 2.1	55.9	¹ 1.5	1946	50,911	3.8	36.4	9.0
1937	69,324	3.1	53.8	3.8	1947	48,064	5.6	33.5	8.0
1938	63,735	8.1	49.1	8.7	1948	43,833	8.8	30.0	10.4
1939	61,609	3.3	47.1	4.1	1949	39,100	² 7.1	26.3	² 8.7
1940	60,428	1.9	45.8	2.8	1950	33,959	13.1	22.5	14.4
1941	59,251	1.9	44.5	2.8	1951 ³	29,492	13.2	19.2	14.7
1942	57,690	2.6	43.1	3.1	1952 ⁴	25,080	15.0	16.1	16.1

¹ Denotes increase.

² Figures adjusted to allow for differences between the fifth and the sixth revisions of the International List of Causes of Death. Provisional comparability ratio (sixth revision : fifth revision) of 0.96 used.

³ National Office of Vital Statistics: Annual summary, 1951, 10-percent sample of death certificates. Current Mortality Analysis, vol. 9, No. 13, 1952, p. 12.

⁴ National Office of Vital Statistics: 10-percent sample for 1952. Monthly Vital Statistics Report, vol. 2, No. 1, 1953, p. 6.

Table 2. Mortality from tuberculosis (all forms), by age, expanding Death Registration States: 5-year intervals, 1900-1935; annually, 1935-50

Calendar year	Number of deaths			Rate per 100,000 population			Percent of deaths		
	Total ¹	Under 45 years	45 years and over	Total ¹	Under 45 years	45 years and over	Total ¹	Under 45 years	45 years and over
1900-----	38,820	29,244	9,499	194.4	185.0	228.6	100.0	75.3	24.5
1905-----	39,168	29,565	9,537	179.9	172.2	207.2	100.0	75.5	24.3
1910-----	73,028	53,934	19,047	153.8	143.8	191.4	100.0	73.9	26.1
1915-----	86,726	63,006	23,635	140.1	129.7	177.5	100.0	72.6	27.3
1920-----	97,366	70,565	26,650	113.1	104.5	143.8	100.0	72.5	27.4
1925-----	86,510	61,042	25,324	84.8	76.8	112.4	100.0	70.6	29.3
1930-----	83,352	56,443	26,789	71.1	62.7	98.6	100.0	67.7	32.1
1935-----	70,080	43,872	26,154	55.1	45.8	83.2	100.0	62.6	37.3
1936-----	71,527	44,242	27,215	55.9	46.1	84.7	100.0	61.9	38.0
1937-----	69,324	42,184	27,088	53.8	43.9	82.5	100.0	60.9	39.1
1938-----	63,735	38,475	25,212	49.1	40.0	75.1	100.0	60.4	39.6
1939-----	61,609	35,959	25,600	47.1	37.2	74.6	100.0	58.4	41.6
1940-----	60,428	34,818	25,541	45.8	36.0	72.4	100.0	57.6	42.3
1941-----	59,251	33,887	25,318	44.5	34.9	70.5	100.0	57.2	42.7
1942-----	57,690	32,339	25,289	43.1	33.3	69.1	100.0	56.1	43.8
1943-----	57,005	30,922	26,019	42.6	32.0	69.9	100.0	54.2	45.6
1944-----	54,731	29,330	25,358	41.3	31.0	67.0	100.0	53.6	46.3
1945-----	52,916	27,928	24,942	40.1	29.9	64.6	100.0	52.8	47.1
1946-----	50,911	25,795	25,077	36.4	25.7	63.7	100.0	50.7	49.3
1947-----	48,064	23,041	24,994	33.5	22.3	62.2	100.0	47.9	52.0
1948-----	43,833	19,733	24,070	30.0	18.8	58.7	100.0	45.0	54.9
1949-----	39,100	17,411	21,657	26.3	16.3	51.7	100.0	44.5	55.4
1950 ² -----	33,959	14,170	19,770	22.5	13.1	46.1	100.0	41.7	58.2

¹ Total includes age not stated.

² Rates based on Apr. 1, 1950, enumerated population.

NOTE: The Death Registration States increased from 10 States and the District of Columbia in 1900 to the entire continental United States in 1933.

to note that the period of accelerated decline coincides with the period which witnessed the growth of combined Federal-State antituberculosis programs, intensified X-ray screening activities, and increased emphasis on tuberculosis control generally.

Trend by Age

In 1900, 3 out of every 4 tuberculosis deaths were among persons under 45 years of age. The mortality rate for this age group was 185.0 per 100,000 population, compared to a rate of 228.6

Table 3. Death rates for tuberculosis (all forms), by age, in continental United States, 1900 and 1950

Age (years)	Rate per 100,000 population			Age (years)	Rate per 100,000 population		
	1900 ¹	1950 ²	Percentage decline		1900 ¹	1950 ²	Percentage decline
All ages-----	194.4	22.5	88.4	25-34-----	294.3	19.1	93.5
Under 1-----	311.6	8.5	97.3	35-44-----	253.6	26.1	89.7
1-4-----	101.8	6.3	93.8	45-54-----	215.6	35.9	83.3
5-14-----	36.2	1.8	95.0	55-64-----	223.0	47.7	78.6
15-24-----	205.7	11.3	94.5	65-74-----	256.1	57.7	77.5
				75 and over-----	269.2	60.9	77.4

¹ Rates for the Death Registration States: 10 States and the District of Columbia.

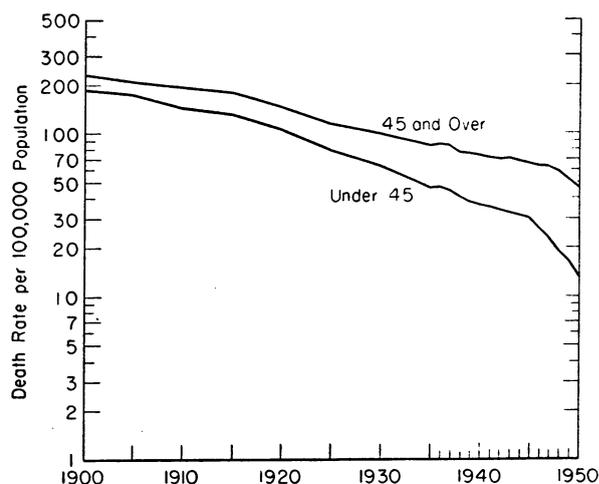
² Rates based on Apr. 1, 1950, enumerated population.

for age 45 and over. In 1950, only 42 percent of the deaths were among persons under 45 years of age. The death rate for the "under 45" age group was 13.1, compared to a rate of 46.1 for the "45 and over" age group.

The tuberculosis death rates for these two age groups at 5-year intervals from 1900 to 1935 and for each year from 1935 through 1950 are shown in figure 1 and table 2. Both groups showed a remarkable decline in tuberculosis mortality, but with a highly significant difference. The relative difference between the rates for the two groups has been growing at an ever-increasing pace. Tuberculosis mortality has declined more rapidly among younger persons than among older persons and probably will continue to do so.

A comparison of tuberculosis death rates for 10 age groups for 1900 and 1950, shown in table 3, provides evidence that the younger age groups have shown higher percentage declines than the older groups. In fact, with only one exception, each age group has shown a greater percentage decline than the next older age group.

Figure 1. Age trend in tuberculosis death rates, 1900-1950 (expanding Death Registration States).



Trend by Race and Sex

Since 1910, tuberculosis mortality has been reduced dramatically for each race-sex group (figure 2 and table 4). Declines in the death rate between 1910 and 1950 ranged from 84.2

Table 4. Death rates for tuberculosis (all forms), by race and sex, expanding Death Registration States: decennial years, 1910-40; annually, 1940-50

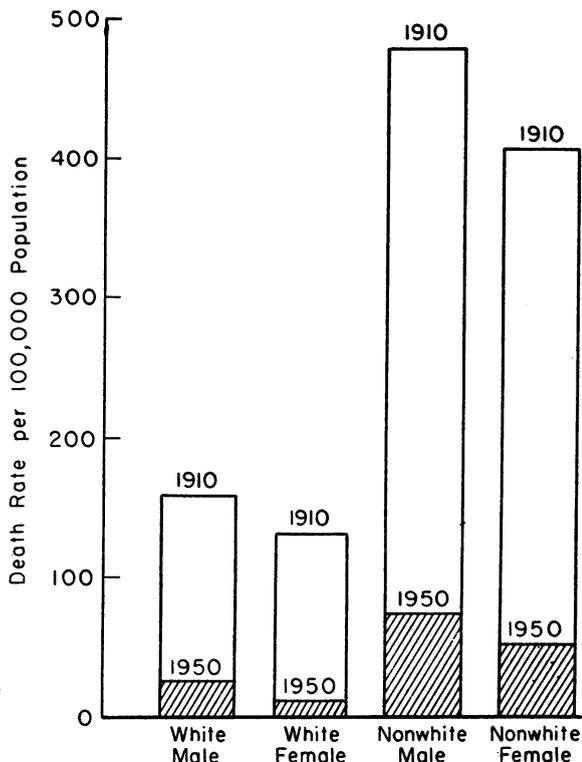
[Rates per 100,000 estimated midyear population in each specified group]

Calendar year	All races			White			Nonwhite		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
1910.....	153.8	167.1	139.8	145.9	158.2	132.8	445.5	479.3	406.8
1920.....	113.1	116.6	109.5	99.5	104.1	94.8	262.4	255.4	269.6
1930.....	71.1	76.2	65.9	57.7	63.4	51.9	192.0	194.3	189.8
1940.....	45.8	54.1	37.5	36.5	44.7	28.2	127.6	138.7	116.9
1941.....	44.5	52.5	36.5	35.4	43.3	27.4	124.2	134.3	114.5
1942.....	43.1	52.3	34.0	34.4	43.3	25.6	118.4	131.4	106.0
1943.....	42.6	52.9	32.6	34.3	44.4	24.7	112.9	126.4	100.0
1944.....	41.3	53.1	30.5	33.7	45.0	23.3	106.2	122.7	91.3
1945.....	40.1	53.0	28.6	32.7	45.1	21.7	102.6	120.9	86.5
1946.....	36.4	46.2	26.9	29.8	39.2	20.6	92.3	106.2	79.2
1947.....	33.5	43.0	24.2	27.1	36.3	18.0	88.1	100.6	76.1
1948.....	30.0	39.4	20.8	24.3	33.3	15.4	78.4	92.1	65.4
1949.....	26.3	34.6	18.1	20.8	28.6	13.2	72.4	86.7	58.8
1950 ¹	22.5	30.1	15.1	17.9	25.0	10.8	62.3	74.7	50.6
Percentage decline 1910-50.....	85.4	82.0	89.2	87.7	84.2	91.9	86.0	84.4	87.6
Percentage decline 1910-40.....	70.2	67.6	73.2	75.0	71.7	78.8	71.4	71.1	71.3
Percentage decline 1940-50.....	50.9	44.4	59.7	51.0	44.1	61.7	51.2	46.1	56.7

¹ Rates based on Apr. 1, 1950, enumerated population.

NOTE: The Death Registration States increased from 20 States and the District of Columbia in 1910 to the entire continental United States in 1933.

Figure 2. Comparison of tuberculosis death rates for race-sex groups in 1910 (Death Registration States) with 1950 (continental United States).



percent for white males to 91.9 percent for white females. For each race, the rates for females dropped faster than for males. In recent years

this sex difference in the mortality decline has become increasingly pronounced.

The characteristic pattern exhibited by tuberculosis mortality for this period has been one of highest mortality in the nonwhite male group, followed in order by the nonwhite female, white male, and white female groups. This pattern has prevailed throughout the period with the exception of two intervals, 1916 and 1919-29, during which the mortality rate for nonwhite females was slightly higher than for nonwhite males.

Current Mortality

Tuberculosis deaths and death rates by age for 1949 through 1951, together with an average for these 3 years, are shown in table 5. As shown by these data, the lowest death rates occur in the younger age groups, and generally the tuberculosis mortality rates increase with age. The tuberculosis mortality level for each age group in 1951 was lower than for the corresponding age group in 1950 and in 1949.

Tuberculosis mortality by race and sex for 1949 through 1951 is presented in table 6. It may be seen here that the rate among males is about twice that among females, and that the rates for nonwhites are more than three times the rates for whites. All groups, however, had lower rates for 1950 than for 1949, and lower rates again for 1951 than for 1950.

Table 5. Mortality from tuberculosis (all forms), by age, in continental United States, 1949-51

Age (years)	Number of deaths				Rate per 100,000 population			
	3-year average	1949	1950	1951 ¹	3-year average ²	1949	1950 ²	1951 ¹
All ages	34, 184	39, 100	33, 959	29, 492	22. 7	26. 3	22. 5	19. 2
Under 1.....	246	279	268	190	7. 8	8. 5	8. 5	5. 6
1-14.....	1, 137	1, 302	1, 263	845	3. 0	3. 5	3. 4	2. 1
15-24.....	2, 487	3, 347	2, 497	1, 616	11. 3	15. 0	11. 3	7. 5
25-34.....	4, 750	5, 712	4, 542	3, 995	20. 0	24. 4	19. 1	16. 9
35-44.....	5, 715	6, 771	5, 600	4, 773	26. 6	32. 7	26. 1	22. 5
45-54.....	6, 308	7, 170	6, 227	5, 528	36. 4	41. 6	35. 9	31. 2
55-64.....	6, 388	7, 067	6, 342	5, 756	48. 0	52. 8	47. 7	41. 5
65-74.....	4, 809	5, 048	4, 855	4, 525	57. 1	65. 7	57. 7	55. 7
75-84.....	2, 044	2, 112	2, 071	1, 949	62. 4	67. 5	63. 2	58. 3
85 and over.....	254	260	275	226	44. 0	56. 4	47. 7	44. 1
Not stated.....	47	32	19	89				

¹ National Office of Vital Statistics: Annual summary, 1951, 10-percent sample of death certificates. Current Mortality Analysis, vol. 9, No. 13.

² Rates based on Apr. 1, 1950, enumerated population.

Table 6. Mortality from tuberculosis (all forms), by race and sex, in continental United States, 1949-51

Sex	Number of deaths				Rate per 100,000 population			
	3-year average	1949	1950	1951 ¹	3-year average ²	1949	1950 ²	1951 ¹
Total.....	34, 184	39, 100	33, 959	29, 492	22. 7	26. 3	22. 5	19. 2
Male.....	22, 665	25, 538	22, 539	19, 919	30. 3	34. 6	30. 1	26. 3
Female.....	11, 518	13, 562	11, 420	9, 573	15. 2	18. 1	15. 1	12. 3
White.....	24, 285	27, 718	24, 136	21, 000	18. 0	20. 8	17. 9	15. 3
Male.....	16, 803	18, 884	16, 787	14, 739	25. 0	28. 6	25. 0	21. 8
Female.....	7, 481	8, 834	7, 349	6, 261	11. 0	13. 2	10. 8	9. 0
Nonwhite.....	9, 899	11, 382	9, 823	8, 492	62. 8	72. 4	62. 3	51. 5
Male.....	5, 862	6, 654	5, 752	5, 180	76. 1	86. 7	74. 7	64. 6
Female.....	4, 037	4, 728	4, 071	3, 312	50. 1	58. 8	50. 6	39. 1

¹ National Office of Vital Statistics: Annual summary, 1951, 10-percent sample of death certificates. Current Mortality Analysis, vol. 9, No. 13. ² Rates based on Apr. 1, 1950, enumerated population.

NOTE: Average numbers of deaths are rounded without being adjusted to group totals.

Table 7. Number of deaths and death rates from tuberculosis (all forms), by age, race, and sex, in continental United States, 1950

Age (years)	Number of deaths								
	All races			White			Nonwhite		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
All ages.....	33, 959	22, 539	11, 420	24, 136	16, 787	7, 349	9, 823	5, 752	4, 071
Under 5.....	1, 091	561	530	678	329	349	413	232	181
5-9.....	221	115	106	126	61	65	95	54	41
10-14.....	219	83	136	115	55	60	104	28	76
15-19.....	790	302	488	300	117	183	490	185	305
20-24.....	1, 707	680	1, 027	765	296	469	942	384	558
25-29.....	2, 137	974	1, 163	1, 111	511	600	1, 026	463	563
30-34.....	2, 405	1, 192	1, 213	1, 374	673	701	1, 031	519	512
35-44.....	5, 600	3, 550	2, 050	3, 682	2, 416	1, 266	1, 918	1, 134	784
45-54.....	6, 227	4, 820	1, 407	4, 462	3, 561	901	1, 765	1, 259	506
55-64.....	6, 342	5, 111	1, 231	5, 164	4, 240	924	1, 178	871	307
65-74.....	4, 855	3, 643	1, 212	4, 213	3, 170	1, 043	642	473	169
75 and over.....	2, 346	1, 498	848	2, 136	1, 352	784	210	146	64
Not stated.....	19	10	9	10	6	4	9	4	5
All ages.....	Rate per 100,000 enumerated population								
	22. 5	30. 1	15. 1	17. 9	25. 0	10. 8	62. 3	74. 7	50. 6
Under 5.....	6. 7	6. 8	6. 7	4. 8	4. 5	5. 0	20. 9	23. 4	18. 3
5-9.....	1. 7	1. 7	1. 6	1. 1	1. 0	1. 1	5. 9	6. 8	5. 1
10-14.....	2. 0	1. 5	2. 5	1. 2	1. 1	1. 3	7. 3	3. 9	10. 7
15-19.....	7. 4	5. 7	9. 2	3. 2	2. 5	3. 9	38. 1	29. 6	46. 2
20-24.....	14. 9	12. 1	17. 5	7. 5	5. 9	9. 1	72. 3	63. 6	79. 8
25-29.....	17. 5	16. 3	18. 5	10. 2	9. 6	10. 8	77. 9	74. 4	81. 0
30-34.....	20. 9	21. 2	20. 6	13. 3	13. 2	13. 3	88. 8	95. 4	83. 0
35-44.....	26. 1	33. 5	18. 9	19. 1	25. 4	13. 0	87. 1	107. 1	68. 6
45-54.....	35. 9	55. 7	16. 2	28. 4	45. 4	11. 5	107. 8	153. 8	61. 8
55-64.....	47. 7	76. 7	18. 6	41. 8	68. 6	15. 0	124. 5	178. 6	66. 9
65-74.....	57. 7	89. 9	27. 8	54. 2	84. 8	25. 9	99. 1	149. 2	51. 1
75 and over.....	60. 9	85. 9	40. 2	59. 2	83. 3	39. 5	84. 6	122. 1	49. 8

A breakdown of tuberculosis mortality by age, race, and sex for 1950 is given in table 7. Important differences may be noted in the ages at which highest mortality occurs in each race-sex category. For white males, the death rates increase almost continuously with age, reaching a high point of about 85 per 100,000 population in the age group 65-74 years. The rate for white females, on the other hand, is fairly uniform from age 20 through age 64, and then rises to a peak at age 75 and over. After age 30, white males generally have higher mortality rates than white females; before age 30, the reverse is true.

Nonwhite males have a higher mortality rate than nonwhite females at ages beyond 30 years. At ages under 30, nonwhite females generally have the higher rates. The pattern for nonwhites is essentially the same as for whites.

The peak age of death is reached between ages 45 and 64 years for nonwhite males and between ages 20 and 34 years for nonwhite females. Both groups show minor peaks for ages under 5 years, then drop to their minimum rates, rise to their major peaks, and finally taper down at the older ages.

Table 8 shows tuberculosis deaths and death rates for 1950 by specified form of disease. The great bulk of the deaths, more than 90 percent, were due to respiratory tuberculosis. Of the 2,866 deaths from nonrespiratory tuberculosis, more than one-third were due to tuberculous meningitis and almost another third to disseminated tuberculosis.

Years of Life Lost

In studying mortality from any disease, it is often useful to obtain some measure which takes into account not only the actual number of deaths from the particular disease but also the age distribution of these deaths. Generally, the younger the age at death, the greater the loss to society. Thus, to fully appreciate the impact of mortality from a given disease, it is necessary to compute a measure which weights each death according to the age at death—the younger the age, the greater the weight assigned to it. This has been done for tuberculosis deaths for 1940 and 1950 (tables 9 and 10).

For 1940, the actual weights used were the

Table 8. Number of deaths and death rates from tuberculosis, by specified form, in continental United States, 1950

Cause of death	Number of deaths	Percent of total	Rate per 100,000 population ¹	Cause of death	Number of deaths	Percent of total	Rate per 100,000 population ¹
Tuberculosis, all forms.....	33, 959	100. 0	22. 5	Tuberculosis of meninges and central nervous system.....	1, 094	3. 2	0. 7
Tuberculosis of respiratory system.....	31, 093	91. 6	20. 6	Tuberculosis of intestines, peritoneum, and mesenteric glands.....	229	0. 7	0. 2
Respiratory tuberculosis with mention of occupational disease of lung.....	635	1. 9	0. 4	Tuberculosis of bones and joints, active or unspecified.....	242	0. 7	0. 2
Pulmonary tuberculosis.....	29, 228	86. 1	19. 4	Late effects of tuberculosis of bones and joints.....	6	(²)	(²)
Pleural tuberculosis.....	385	1. 1	0. 3	Tuberculosis of skin and subcutaneous cellular tissue.....	12	(²)	(²)
Primary tuberculosis complex with symptoms.....	8	(²)	(²)	Tuberculosis of lymphatic system.....	67	0. 2	(²)
Tracheobronchial glandular tuberculosis with symptoms.....	14	(²)	(²)	Tuberculosis of genitourinary system.....	274	0. 8	0. 2
Other respiratory tuberculosis.....	34	0. 1	(²)	Tuberculosis of adrenal glands.....	29	0. 1	(²)
Tuberculosis, unspecified site.....	789	2. 3	0. 5	Tuberculosis of other organs.....	38	0. 1	(²)
Tuberculosis, other forms.....	2, 866	8. 4	1. 9	Disseminated tuberculosis.....	875	2. 6	0. 6

¹ Rates based on Apr. 1, 1950, enumerated population.

² Less than 0.05.

Table 9. Years of life lost from tuberculosis deaths in continental United States, 1940

Age (years)	White male				White female			
	Tuberculosis eliminated		Number of tuberculosis deaths	Potential years lost	Tuberculosis eliminated		Number of tuberculosis deaths	Potential years lost
	1939-41 \bar{e}_x	Interpolated value			1939-41 \bar{e}_x	Interpolated value		
Under 1.....	63.54	64.64	163	10,536	67.90	68.73	153	10,516
1-2.....	65.73	65.39	151	9,874	69.56	69.21	158	10,935
2-3.....	65.04	64.63	79	5,106	68.85	68.42	70	4,789
3-4.....	64.21	63.77	61	3,890	67.99	67.55	50	3,378
4-5.....	63.33	62.88	48	3,018	67.10	66.64	42	2,799
5-9.....	62.42	60.09	140	8,413	66.18	63.82	129	8,233
10-14.....	57.76	55.41	152	8,422	61.45	59.06	200	11,812
15-19.....	53.06	50.77	552	28,025	56.66	54.30	1,022	55,495
20-24.....	48.47	46.21	1,260	58,225	51.93	49.58	1,932	95,789
25-29.....	43.94	41.67	1,746	72,756	47.23	44.91	2,069	92,919
30-34.....	39.40	37.15	2,056	76,380	42.58	40.28	1,773	71,416
35-39.....	34.89	32.69	2,222	72,637	37.98	35.73	1,511	53,988
40-44.....	30.48	28.36	2,661	75,466	33.47	31.28	1,222	38,224
45-49.....	26.24	24.25	2,962	71,829	29.08	26.98	1,031	27,816
50-54.....	22.25	20.40	3,133	63,913	24.87	22.86	954	21,808
55-59.....	18.55	16.88	2,846	48,040	20.85	18.97	893	16,940
60-64.....	15.20	13.69	2,328	31,870	17.09	15.37	862	13,249
65-69.....	12.17	10.83	1,768	19,147	13.64	12.10	881	10,660
70-74.....	9.48	8.34	1,220	10,175	10.55	9.26	761	7,047
75-79.....	7.20	6.30	655	4,127	7.96	6.93	519	3,597
80-84.....	5.40	4.72	272	1,284	5.90	5.13	263	1,349
85 and over.....	4.03	3.06	96	294	4.35	3.24	108	350
Not stated.....			27				10	
Total.....			26,598	683,427			16,613	563,109
	Nonwhite male				Nonwhite female			
Under 1.....	54.44	56.38	92	5,187	57.60	59.13	88	5,203
1-2.....	58.31	58.08	97	5,634	60.66	60.14	74	4,470
2-3.....	57.85	57.47	45	2,586	60.15	59.76	53	3,167
3-4.....	57.09	56.67	39	2,210	59.37	58.94	32	1,886
4-5.....	56.24	55.80	25	1,395	58.51	58.07	23	1,336
5-9.....	55.35	53.04	107	5,675	57.63	55.30	93	5,143
10-14.....	50.73	48.42	148	7,166	52.96	50.62	275	13,921
15-19.....	46.11	43.92	663	29,119	48.27	46.07	1,138	52,428
20-24.....	41.72	39.67	1,100	43,637	43.86	41.74	1,460	60,940
25-29.....	37.61	35.63	1,125	40,084	39.61	37.54	1,303	48,915
30-34.....	33.64	31.72	999	31,688	35.47	33.50	947	31,725
35-39.....	29.79	27.96	956	26,730	31.52	29.67	759	22,520
40-44.....	26.12	24.41	1,014	24,752	27.82	26.10	541	14,120
45-49.....	22.69	21.18	850	18,003	24.38	22.85	379	8,660
50-54.....	19.67	18.34	670	12,288	21.32	19.99	301	6,017
55-59.....	17.01	15.82	462	7,309	18.65	17.47	208	3,634
60-64.....	14.62	13.48	316	4,260	16.29	15.17	135	2,048
65-69.....	12.34	11.25	230	2,588	14.05	12.97	96	1,245
70-74.....	10.16	9.16	147	1,347	11.88	10.87	51	554
75-79.....	8.16	7.33	58	425	9.85	8.94	24	215
80-84.....	6.50	5.80	24	139	8.03	7.22	9	65
85 and over.....	5.10	3.73	14	52	6.40	4.92	15	74
Not stated.....			16				16	
Total.....			9,197	272,274			8,020	288,286

¹ Value given for \bar{e}_x at age 90 is used.

life expectancy values taken from a life table from which tuberculosis as a cause of death had been eliminated. The number of deaths for each age group was multiplied by the life expectancy for the particular age group. (The life expectancy was taken at the midpoint of the age interval, since it is assumed that all

deaths in a given age group occur at the midpoint.) The product is the number of years of life that the age group could expect to live if tuberculosis had been eliminated as a cause of death. The sum of the products indicates the total potential years of life lost for the entire group.

Table 10. Years of life lost from tuberculosis deaths in continental United States, 1950

Age (years)	White male				White female			
	1950 e_x	Interpolated value	Number of deaths	Potential years lost	1950 e_x	Interpolated value	Number of deaths	Potential years lost
Under 1	66.6	67.1	72	4,831	72.4	72.8	77	5,606
1-4	67.6	65.8	257	16,911	73.1	71.3	272	19,394
5-9	64.0	61.6	61	3,758	69.5	67.1	65	4,362
10-14	59.2	56.8	55	3,124	64.6	62.2	60	3,732
15-19	54.4	52.1	117	6,096	59.7	57.3	183	10,486
20-24	49.7	47.5	296	14,060	54.9	52.5	469	24,623
25-29	45.2	42.9	511	21,922	50.1	47.8	600	28,680
30-34	40.5	38.2	673	25,709	45.4	43.0	701	30,143
35-39	35.9	33.7	1,030	34,711	40.6	38.3	694	26,580
40-44	31.4	29.3	1,386	40,610	36.0	33.8	572	19,334
45-49	27.1	25.1	1,578	39,608	31.5	29.3	493	14,445
50-54	23.0	21.2	1,983	42,040	27.1	25.0	408	10,200
55-59	19.3	17.6	2,145	37,752	22.9	21.0	445	9,345
60-64	15.9	14.5	2,095	30,378	19.0	17.2	479	8,239
65-69	13.0	11.7	1,888	22,090	15.3	13.7	529	7,247
70-74	10.3	9.2	1,282	11,794	12.0	10.6	514	5,448
75-79	8.0	7.1	821	5,829	9.2	8.1	433	3,507
80-84	6.1	5.3	384	2,035	6.9	6.0	251	1,506
85 and over	4.5	4.5	147	662	5.1	5.1	100	510
Not stated			6				4	
Total			16,787	363,920			7,349	233,387
Age (years)	Nonwhite male				Nonwhite female			
	1950 e_x	Interpolated value	Number of deaths	Potential years lost	1950 e_x	Interpolated value	Number of deaths	Potential years lost
Under 1	59.2	60.3	65	3,920	63.2	64.0	54	3,456
1-4	61.3	59.7	167	9,970	64.8	63.1	127	8,014
5-9	58.0	55.6	54	3,002	61.4	59.1	41	2,423
10-14	53.2	50.9	28	1,425	56.7	54.3	76	4,127
15-19	48.5	46.3	185	8,566	51.9	49.6	305	15,128
20-24	44.0	41.9	384	16,090	47.3	45.1	558	25,166
25-29	39.7	37.6	463	17,409	42.9	40.7	563	22,914
30-34	35.5	33.5	519	17,387	38.5	36.5	512	18,688
35-39	31.5	29.5	533	15,724	34.4	32.4	441	14,288
40-44	27.5	25.7	601	15,446	30.4	28.5	343	9,776
45-49	23.8	22.2	632	14,030	26.6	24.9	262	6,524
50-54	20.5	19.1	627	11,976	23.2	21.7	244	5,295
55-59	17.6	16.4	518	8,495	20.2	19.0	163	3,097
60-64	15.2	14.3	353	5,048	17.7	16.7	144	2,405
65-69	13.3	12.2	297	3,623	15.6	14.3	109	1,559
70-74	11.1	10.2	176	1,795	13.0	12.0	60	720
75-79	9.3	8.7	99	861	11.0	10.3	37	381
80-84	8.0	7.0	32	224	9.5	8.5	14	119
85 and over	6.0	6.0	15	90	7.4	7.4	13	96
Not stated			4				5	
Total			5,752	155,081			4,071	144,176

¹ Value given for e_x at age 85 is used.

Table 11. Tuberculosis deaths and potential years of life lost from tuberculosis deaths, by race and sex, in continental United States, 1940 and 1950

	Tuberculosis deaths				Potential years of life lost (in thousands)			
	1950	1940	Numerical decline	Percentage decline	1950	1940	Numerical decline	Percentage decline
Total.....	33, 959	60, 428	26, 469	43. 8	896	1, 806	910	50. 4
White male.....	16, 787	26, 598	9, 811	36. 9	364	683	319	46. 7
White female.....	7, 349	16, 613	9, 264	55. 8	233	563	330	58. 6
Nonwhite male.....	5, 752	9, 197	3, 445	37. 5	155	272	117	43. 0
Nonwhite female.....	4, 071	8, 020	3, 949	49. 2	144	288	144	50. 0

For 1950, years of life lost were computed similarly. No life table with tuberculosis eliminated was available for 1950, however. Hence, the potential years of life lost for the 1950 tuberculosis deaths are slightly understated.

As shown in table 11, somewhat less than a million years of life were lost by tuberculosis deaths in 1950. This represents a decline of 910,000 years, or 50.4 percent, from the staggering 1,806,000 years lost as the result of the 1940 tuberculosis deaths. All race-sex groups shared in the general decline, each group showing a substantial reduction during this period.

A comparison of the percentage decline in deaths with the percentage decline in years of life lost shows that each race-sex group had a greater decline in the latter. This is a result of the increasing age at death from tuberculosis,

a fact which should be cited as one of the notable achievements in tuberculosis control.

Conclusion

It has been shown in this paper that tuberculosis mortality in the United States is now the lowest in history and that the greatest gains have been achieved in recent years. Moreover, the outlook for the future is encouraging. Tuberculosis, however, ranked seventh as a cause of death in 1950, and was the leading killer from disease for the 15-34 age group. The toll from tuberculosis mortality in terms of potential years of life lost amounted to about 900,000 years in 1950. It is evident from these figures alone that tuberculosis still remains a major killer and still retains its importance as a leading public health problem.

Consolidation of Public Health Service Regional Offices

The Public Health Service offices for Region I (Connecticut, Maine, Massachusetts, Vermont, New Hampshire, Rhode Island) have been consolidated with those for Region II (New York, New Jersey, Delaware, Pennsylvania). Headquarters are at New York City. Dr. Henry A. Holle is regional medical director.

Region IV offices (Kentucky, Michigan, Ohio) have been consolidated with those for Region V (Illinois, Indiana, Wisconsin, Minnesota). Headquarters are at Chicago. Dr. Harald M. Graning is regional director.

Dr. Richard F. Boyd, formerly at Boston, is now regional medical director for Region X, San Francisco. Also transferred to Region X was Dr. Welby W. Bigelow, who had been acting director for Region IV at Cleveland.

technical publications

Reported Incidence of Selected Notifiable Diseases: United States, Each Division and State, 1920-50.

Vital Statistics Special Reports. National Summaries, vol. 37, No. 9, June 15, 1953. 64 pages; tables. Available from the National Office of Vital Statistics, Public Health Service, Washington 25, D. C.

Because of the large number of requests for time series data on notifiable diseases for the country as a whole or for individual States, the National Office of Vital Statistics has issued this special summary report giving the reported incidence of selected notifiable diseases for the United States, each division and State, for the years 1920 through 1950.

A total of 31 diseases of national interest is included in the listing.

Since figures were available from comparatively few States prior to 1920, this date was selected arbitrarily as the starting point for the reports of most diseases. A few series are for shorter periods.

The tabulations show not only trends in incidence of disease, but also the changing patterns in classifying and reporting over the years.

The diseases included in the tabulations are: amebiasis, anthrax, bacillary dysentery, botulism, brucellosis, dengue, diphtheria, infectious hepatitis, acute infectious encephalitis, leprosy, leptospirosis, malaria, meningococcal infections, psittacosis and ornithosis, acute poliomyelitis, Q fever, measles, tetanus, rabies in man and in animals, Rocky Mountain spotted fever, scarlet fever and streptococcal sore throat, smallpox, trachoma, trichiniasis, tularemia, tuberculosis, typhoid and paratyphoid fever, endemic typhus, whooping cough, and plague.

for the general public

Coronary Artery Disease

Health Information Series No. 68, Public Health Service Publication No. 145. Revised 1953. 5 cents; \$2.25 per 100.

One of a series of four health information leaflets on the diseases of the heart (see *Public Health Reports*, vol. 67, No. 9, p. 928), this recently revised publication is concerned with one of the most common forms of heart disease.

The introductory paragraphs, describing the coronary artery system, are followed by answers to the questions of what is coronary artery disease; what can be done for coronary artery disease; how long can the person with coronary artery disease live; who gets coronary artery disease; and what is now being done to prevent coronary artery disease.

The frequently used terms angina pectoris, coronary thrombosis, and

collateral circulation are explained, and the various types of medicine used in the relief of this heart condition, and current research on its cause, are discussed. The reader is advised that under the supervision of a physician, the victim of coronary artery disease has a good chance for a useful life of many years.

Typhoid Fever

Health Information Series, No. 72. Public Health Service Publication No. 282. 1953. 1-fold leaflet. 5 cents; \$1.75 per 100.

Although typhoid fever causes relatively few cases of illness or death in the United States, it remains a public health problem in other parts of the world. This health information leaflet describes the disease, its symptoms, how it is transmitted, and present methods of treatment.

Several paragraphs are devoted to the typhoid carrier and the health problems peculiar to this condition. Preventive measures are stressed: vaccination to protect the individual and good public health and home health practices to protect the community. Suggestions are given for travelers, and readers are advised to consult their health officer or physician for further information.

Rheumatic Heart Disease

Health Information Series No. 67, Public Health Service Publication No. 144. 1953. 2-fold leaflet. 5 cents; \$2.25 per 100 copies.

The council on rheumatic fever and congenital heart disease of the American Heart Association released, in January, a statement on the prevention of recurrent attacks of rheumatic fever through the prolonged use of sulfonamide or penicillin. (See *Public Health Reports*, January 1953.)

Because of the importance of this prophylactic measure in the control of rheumatic fever and rheumatic heart disease, this health information leaflet has been revised accordingly. In addition to the general information on the nature of rheumatic heart disease and rheumatic fever, diagnosis and treatment, contained in the first edition, the leaflet now includes a paragraph on the advisability of giving children who have had rheumatic fever sulfonamide or penicillin daily, under doctor's directions, for at least 5 years.

Publications for which prices are quoted are for sale by the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C. Orders should be accompanied by cash, check, or money order and should fully identify the publication (including its Public Health Service publication number). Single copies of most Public Health Service publications can be obtained without charge from the Public Inquiries Branch, Public Health Service, Washington 25, D. C.
